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How does one conduct a workshop in self-instructional film production? A demonstration kit was put together to enable a teacher to do this. It consists of five monographs' ("Programing the Instructional Film", "Stating Objectives", "Developing The Instructional Specification", "An Introduction to Programing", and "Lighting Fundamentals"), one 8mm silent film, and one 8mm sound film. In such a workshop, participants can be expected at some point to produce their own 8mm cartridge self-instructional film. (GO/MF)

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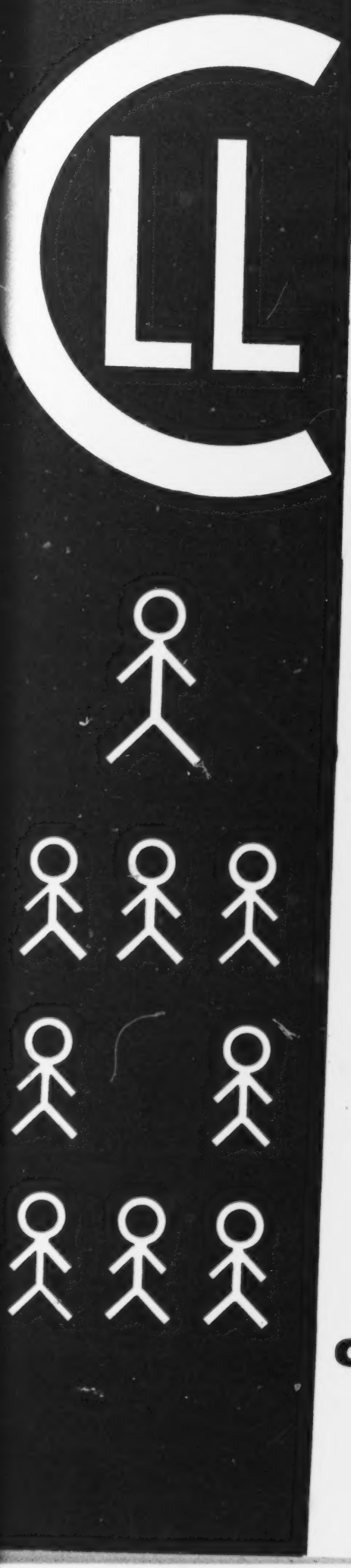

FINAL REPORT

Project No. 5-0269

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PRODUCING THE 8MM SELF-INSTRUCTIONAL FILM: A DEMONSTRATION KIT

July 1968

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
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Department of Educational Psychology
Arizona State University
Tempe, Arizona

CLASSROOM LEARNING LABORATORY

experimental analyses of student behavior

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Producing the 8MM Self-Instructional Film: A Demonstration Kit

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Vernon S. Gerlach

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Producing The 8mm Self-Instructional Film

(A Demonstration Kit)

Technological advances have far outdistanced classroom instructional procedures. While substantial research efforts have been directed toward the development of equipment and, in the case of the behavioral laboratory, toward the generation of principles, little has been invested in the specification of classroom practices and materials which are consistent with such principles.

A prime example of the urgent need for effective specification and dissemination of information is the AV "hardware" field, where the gap between research and classroom utilization is not only wide, but constantly increasing. If there are "seven" kinds of effective hardware, there are "seventy times seven" demonstrated ways of using this hardware to better implement the attainment of educational objectives. However, the dissemination of information concerning both the nature of newer media and the application of these media to classroom instruction is a critical problem facing education today.

Consider two recent technological developments, one a product of the hardware engineer and the other of the behavioral engineer. The first is the cartridge projector. Designed for a silent 8mm film loop of not less than 1/2 nor more than 4 minutes duration, this projector is so simple to operate that even a kindergarten pupil can learn to use it correctly in a few seconds. Problems of threading, rewinding, and film maintenance are virtually non-existent, since the continuous loop never leaves the plastic cartridge. Though both educators and film producers quickly perceived the potential of the projector for individualizing instruction, few, if any, truly <u>self-instructional</u> films have appeared.

Likewise, programmed learning as a means of individualizing instruction has been articulated almost exclusively in a textbook form of one kind or another. Educators have been slow to recognize that many characteristics of programmed learning, such as the behavioral analysis of a task, the requirement of overt responses in successive approximations of a criterion performance, and the provision of immediate feedback, are highly amenable to the unique mode of stimulus display afforded by the motion picture.

The materials in this kit enable a teacher to achieve these objectives:

1) to select the equipment suited to the production of 8mm self-instructional films;

2) to employ a simplified cinematographic technique in self-instructional film production; and

3) to plan and produce self-instructional films which will effectively implement the specific objectives of a teacher or a school.

The kit contains printed (textual) materials, 8mm silent films, and an 8mm sound as instructional media. Content of the kit is especially geared to the needs of teachers who lack either the opportunity or the inclination to acquire such skills in formal instruction at a university.

I. Programming the Instructional Film

This monograph serves two functions. First, it provides the instructor who conducts the workshop in self-instructional film production with a "teacher's manual". Secondly, the monograph is intended to serve the student, at the end of the workshop, with a summary of the information which he has acquired from the various materials.

The monograph establishes a rationale for the type of film

discussed in the kit. A distinction between films which merely present information and films which lead to the acquisition and maintenance of behavior is made. Stimulus-oriented films are contracted with response-oriented films, and the characteristics of the programmed film are described.

The method of preparing the Instructional Specifications for the programmed film is outlined. The components of the Instructional Specifications are outlined and examples of Instructional Specifications for various types of films are included.

The next section of the monograph deals with the development of the Program Outline. In essence, the Program Outline is simply a linear program which included rough sketches of the pictorial stimuli which are to be included in the film. Detailed examples of the Program Outline are included, and reference is made to Film #11 (see below) throughout this section of the monograph. Reasons for using a program outline rather than a story-board, as originally proposed, are set forth in this section.

II. Stating Objectives

This monograph was developed for use with Film #11, "Observation and Inference". The script for this film is contained in the yellow pages at the end of the monograph. The first section of the monograph deals with the characteristics of behaviorally stated objectives: (1) a learner behavior and (2) an observable behavior. The learner is then provided practice in constructing behaviorally stated objectives using the INDOC system. This system categorizes most cognitive behaviors of interest to elementary and secondary school teachers under five headings: Identify, Describe, Name, Order, and Construct. Finally, the monograph describes criteria for selecting tasks (once the behavioral objectives have been

constructed) which are amenable to the medium under consideration. Various examples of programming techniques are employed throughout the monograph in an effort to give the learner actual experience with programmed instruction prior to having him begin his own efforts.

Ideally, Film #11, "Observation and Inference", should be cartridged for use in an 8mm cartridge projector. If the film is used in this manner, it should be divided into three films as indicated in the script. These three parts of Film #11 are referred to as Film 1, Film 2, and Film 3. If the user of the kit has only a 16mm projector available, he should be certain that the film is set at silent speed. If no projector is available, the script itself may suffice.

"Observation and Inference" is not intended to be an example of a professional film production. On the contrary, the film is the result of assignments given to participants in actual field tests. Students were given the script for "Observation and Inference" and, after instruction in cinematography, were asked to produce a silent film. This assignment resulted in 8 films on a single topic, all varying substantially from one another in details. Participants of the workshop selected the best portions from each of the 8 films and combined them into a single film covering the topic. This edited 8mm film was then sent to a commercial film producer with the request that he produce an approximation of the original 8mm film on 16mm. Other than maintaining uniformity of printed material and general format, this firm produced a film which is typical of the kind of work that one might expect from students fairly early in their workshop activities. The 16mm print retains both many of the excellencies as well as many of the flaws of the student productions.

The instructor of the workshop should use this film in a discussion

session. Such obvious flaws as over-exposure should be criticized by the students. The obvious error in scene 21, where the evidence upon which the inference should be based is missing, should be noted by the students. Likewise, the error in scene 55, where the pictorial stimulus is of such a nature that it is impossible to determine whether or not the children are seated, should be noted and discussed. Following discussion of the film "Observation and Inference," students enthusiastically accept the assignment to produce their own "Observation and Inference." Generally their results are better than Film #11.

III. Developing the Instructional Specification

The four components of the Instructional Specification (IS) are described in this monograph: terminal behavior, instructional cue, elicitors, and stimulus limits. Using the film "Observation and Inference," the monograph provides the learner with practice in identifying instructional cues as well as constructing instructional cues. Since the complete set of Instructional Specifications for this film would actually serve as a key to the exercises in the monograph, it is not included. The complete set of Instructional Specifications is included in Monograph #1, which the instructor will have during the workshop and which should be given to the participants at the conclusion of the workshop. If copies are needed at the conclusion of this monograph, they can be reproduced easily (pp. 30-32, Monograph #1).

The monograph next defines the third component of an IS, the elicitors. As was the case with instructional cues, the student is first given practice in identifying elicitors and then he is led to construct elicitors of his own. The film "Observation and Inference" again serves as a vehicle in these exercises.

Finally, the subject of specifying the stimulus limits, the fourth component of the IS, is discussed. While all components of the IS are essential to the development of a good self-instructional film, the precise specification of the

stimulus limits is of critical importance to the process of cinematography. Unless the stimulus limits are well defined, the film producer will be unable to develop precise and powerful pictorial stimuli to accompany his textual stimuli. Actually, in the field test of these materials, it was discovered that the traditional story board did not provide the tight direction needed for a successful film production. Consequently, for people of the type who participated in the field test workshops, a more exact means of specifying film content was needed. It was as a result of these experiences that the strong emphasis on the stimulus limits as a part of the preparation for producing the film developed.

At the conclusion of the monograph the student is required to develop a set of Instructional Specifications on the subject of first-class levers. As soon as the student has progressed sufficiently in his work in programming and cinematography, he should use this set of Instructional Specifications to develop a program outline and, subsequently, to produce the film.

IV. An Introduction to Programming

This monograph, #14, presents the fundamentals of programming. When the participant has finished this monograph, he should be able to produce an acceptable program outline.

Although the 8mm film is amenable primarily to linear instructional sequences, the first section of the program is designed to acquaint the participant with branching types of program sequences as well. Linear programming and several types of branching programming are discussed in sufficient depth to enable the learner to identify each when he encounters an example.

Following this, the monograph deals with types of responses and methods of eliciting these responses. The first programming strategy which the user practices is prompting. Following this, two general methods of programming are discussed -- the Ruleg and the Egrul. Types of responses are then described

with special emphasis on those which are most useful in a programmed film.

Most important of all for the beginning programmer are those frames dealing with the transfer of stimulus control and the problems of stimulus generalization and discrimination. Together with providing instruction for producing programs which attend adequately to these problems, the monograph also defines a pitfall -- copying frames -- which most beginners encounter, and it provides cues for avoiding this common error. Problems of sequencing frames designed to shape stimulus discrimination are also discussed.

While all of the above topics are related primarily to problems of the acquisition of a new response or behavior, good teachers realize that this is only a small portion of the "battle of teaching." Once a learner has acquired a response, the problem of maintaining this response under the existing stimulus conditions as well as under new stimulus conditions must be met. A lengthy section on methods of maintaining acquired responses is then presented in which the participant learns to construct frames designed to handle this difficult problem.

The monograph ends with a section on chaining. This section should enable the learner to reach an intelligent decision as to what type of chaining he needs to employ for the task which he has selected.

The instructor should emphasize very strongly that this monograph is not intended to serve as a comprehensive course in programming. On the contrary, it is designed to enable the user to construct an effective program outline for a film. Consequently, only those aspects of programming which are directly related to the type of activity which the learner must engage in while producing films are included.

It is strongly recommended that the instructor of the workshop proceed from this monograph to the monograph on Lighting Fundamentals (#15). The reason for this is that Monograph #14 does not present an example of the program outline

per se, such as that found in the yellow pages of Monograph #11. These pages in Monograph #11 should serve as a model for the program outline, while the content of Monograph #15 should serve as effective content for the participant's first assignment in constructing a program outline. In other words, after he has worked through Monograph #15, he should attempt to construct a program outline which he could use if he were to produce his own film on the subject of lighting.

V. Lighting Fundamentals

Monograph #15 was developed late in the project to replace approximately five earlier and somewhat briefer monographs. At the time the proposal was written and during the first year of the project, the type of highly automated camera which is now commonplace was not yet available. Indeed, during the first year of field trials of materials prepared for this project, participants in the workshops used only standard-8 motion picture cameras. The first super-8 motion picture camera did not appear on the market until May 1965. As a result of developments in camera technology, substantial changes were made in the instructional materials in this kit in the areas of lighting and cinematography in general. There are very few tasks which the participant in the workshop will encounter for which the light which is attached to the motion picture camera will not suffice. In other words, it is no longer necessary for the participant to learn how to set up a battery of three or four or more floodlights on his "set."

Lighting Fundamentals, then, deals primarily with the manipulation of either the subject or the camera rather than with the manipulation of floodlights mounted on light stands. A simple system, based upon shadow discrimination, is provided for the participant and he is able to achieve the effects which he desires by following simple rules of thumb. It is extremely interesting to

note that the quality of finished film has increased markedly since the time when instruction in the use of traditional floodlights was replaced with instruction in the use of simple rules of thumb for lighting as presented in this monograph. On extremely rare occasions it may be necessary to go beyond the camera-attached light; when such situations do arise, the participant should be directed to standard textbooks in photography which contain a chapter on lighting.

Monograph #15 must be used to serve a secondary, but nevertheless extremely important, purpose. The film "Observation and Inference" presents to the learner a method of stimulus presentation in which the textual material is incorporated within the film itself. Another method, which is probably simpler from a production viewpoint, involves the use of an adjunct paper program. The pictorial stimuli are presented on film and the textual stimuli are presented on an accompanying mimeographed sheet. Monograph #15, together with the accompanying film, is an example of this type program. Indeed, probably most beginning efforts will more closely resemble this type of production than they will resemble "Observation and Inference."

As was mentioned above, it is highly recommended that the students be assigned the task of producing a program outline on the subject of lighting fundamentals following their use of this monograph. This will provide them necessary practice in constructing a program sequence with accompanying specifications for pictorial stimuli. (The instructor will, of course, recognize that this is an application of the technique of backward chaining discussed in the monograph on programming.) Following the successful completion of this exercise, the participant should be able to develop a program outline on a subject of his own choosing.

VI. Effective Use of Your Super-8 Camera

The final component of the kit is an 8mm Kodak sound film. The soundtrack

is magnetic, and consequently it is essential that the appropriate type of projector be used.

More than any other component of the kit, this film demonstrates the dramatic changes in technology which have taken place since the proposal was written. Because of these changes in technology, it is no longer necessary to provide detailed instruction in selection of equipment and mechanics of camera operation. To illustrate, the unit on the selection and use of the light meter was discarded completely because automatic cameras of the type shown in this film make the use of a light meter unnecessary. In fact, most good automatic cameras do not have a manual override; consequently, it is impossible to use the information which one might acquire by using and reading a light meter. Other aspects of camera operation which are no longer necessary in a workshop of this type are such items as selecting the correct f-stop and setting the camera for the proper ASA rating. The automatic camera has a shutter coupled to a built-in meter which eliminates the necessity of manually setting the f-stop. Super-8 film comes in a notched cartridge which, when inserted into the camera, sets the camera for the ASA rating of the film in use.

Virtually the only component in camera operation which the workshop instructor must check carefully is the matter of focusing. If the students can be trained the first time they use the camera never to press the shutter release without first ascertaining whether or not the camera is focused properly, they are assured of virtually one hundred per cent success from the very beginning of their motion picture production activities. Experience with participants indicates that this, together with a strong exhortation to always use a tripod, is the only additional instruction in camera technique necessary.

There is no specified time at which this film should be introduced. It has been used at the very beginning of a workshop, it has been used somewhere in

the middle of a workshop, and it has been used as the final component in a workshop. There is some advantage to introducing this film early in the workshop in that most participants are anxious to get their hands on a camera and to see what they can do with a reel of motion-picture film. While it is true that one runs the risk of having the participants acquire bad habits, the fact of the matter is that the instruction in the film seems to be adequate enough to prevent any significant occurrence along this line.

Naturally, the participants should not be expected to produce a <u>self-instructional</u> film if they are given the camera early in the workshop. Participants who do use the camera early in the workshop should be given a simple assignment such as "A Tour of the Campus" or some type of simple "how-to-do-it" task. As mentioned above, the film has been introduced with great success immediately following the use of Monograph #11, at which time the participants are given the assignment to produce their own version of the "Observation and Inference" film.